A.I.A. FILE NO. 39-B

Quiet, Please!

Sound Conditioning with
ACOUSTI-CELOTEX

The George P. Little Company, Inc.

Acoustical Engineers & Contractors
ESTABLISHED 1923
Distributors of Celotex Acoustical Products since 1925

Quiet, Please!

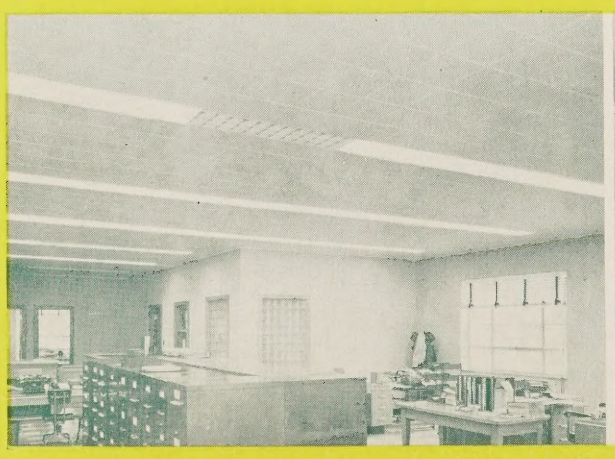
When you are about to buy or to influence the purchase of Sound Conditioning, the Question before the House is, What is the best for the money to be invested?

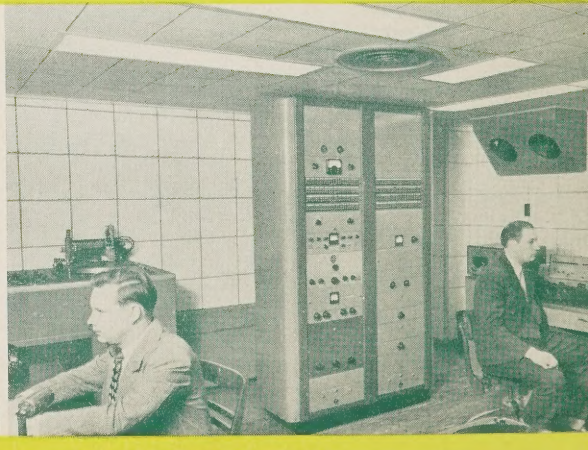
Wide selection can be made from the group of Celotex Acoustical Materials. Erected in place, their costs range between the approximate limits of a quarter to a dollar per square foot. The difference is partly in material cost and partly in erection labor cost.

While buyers can safely exercise personal choice in selecting materials and method of erection in many cases, satisfactory results could not follow in others. Taking a long-range view, The Celotex Corporation believes buyers should have the benefit of individual appraisals of their job conditions and recommendations by informed specialists in this business.

A manufacturer with these convictions has the practical alternatives of (1) selling his materials through company-owned branch offices or (2) through franchised distributors, as distinct from "open" distribution. In selecting the second course, Celotex gained the performance incentive and the freedom to meet local situations promptly that have helped win and hold outstanding leadership as attested by industry sales records.

With some exceptions, acoustical materials are usually erected on ceilings. It is annoying to have floor coverings come *up;* it is more serious when ceilings fall *down.* Twenty-five years' experience has taught us a great deal about the safe erection of acoustical materials: it is an "ingredient" in every quotation we make, and although not itemized is not overlooked by careful buyers.





An interesting and informative color motion picture film entitled "Quiet, Please!" has been produced for The Celotex Corporation. It is available from The George P. Little Company for private showings in schools, offices, institutions, etc. Time, approximately 20 minutes. Size, 16 mm.

Whether the buyer is a general contractor erecting a new building or a building owner or tenant, the reputation we have earned on projects large and small for accommodating our work to others' working schedules is another intangible the value of which experienced buyers recognize.

It is well also to look ahead, when job-changes, future additions or replacements made necessary by space alterations will call for service. The reliability and integrity of your acoustical contractor again become of value to the buyer, and in our record of twenty-five years' service there is reasonable assurance that we shall be available when needed.

Beyond the know-how experience has taught us, our behavior yardstick is the Golden Rule. It seems to be that of the vast majority of the people we are privileged to serve.

Appearance and Utility

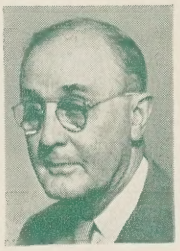
In selecting a Sound Conditioning (acoustical) material, there is a common tendency among inexperienced buyers to be influenced solely by personal reaction to the appearance of material samples.

Since viewing a *ceiling* in place creates an appearance impression quite different from the reaction to a single small sample viewed at close range, it is unwise to reach a decision from sample only.

Usually the Sound Conditioning material will be expected to serve its purpose for the life of the building, and so the ease and cost of maintenance should be weighed with the initial investment. Few buyers would incline toward the selection of a particular material if they knew in advance that maintenance would call for difficult and costly special cleaning or painting techniques to preserve a clean surface with good light reflection.

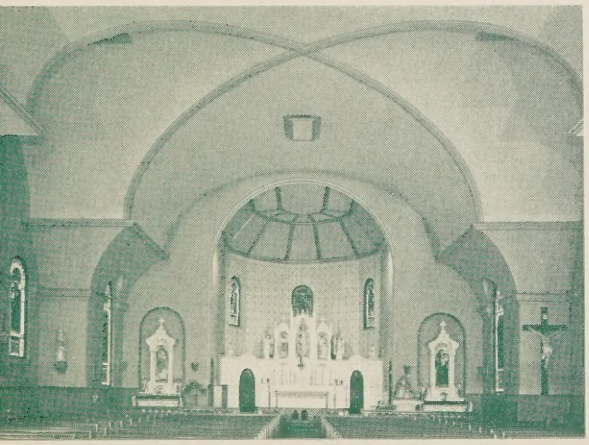
After twenty-five years of experience in thousands of installations under varying job conditions, it is recognized that no other type of acoustical material offers such easy, safe and economical maintenance as perforated fibre board, of which Acousti-Celotex is the pioneer. It is found in America's finest offices, schools, hospitals and other public buildings, where it has stood the test of time, and it is today still being chosen by architects, engineers, purchasing agents and building managers who made their initial purchase as long as twenty-five years ago.

Consultant in Acoustical Problems

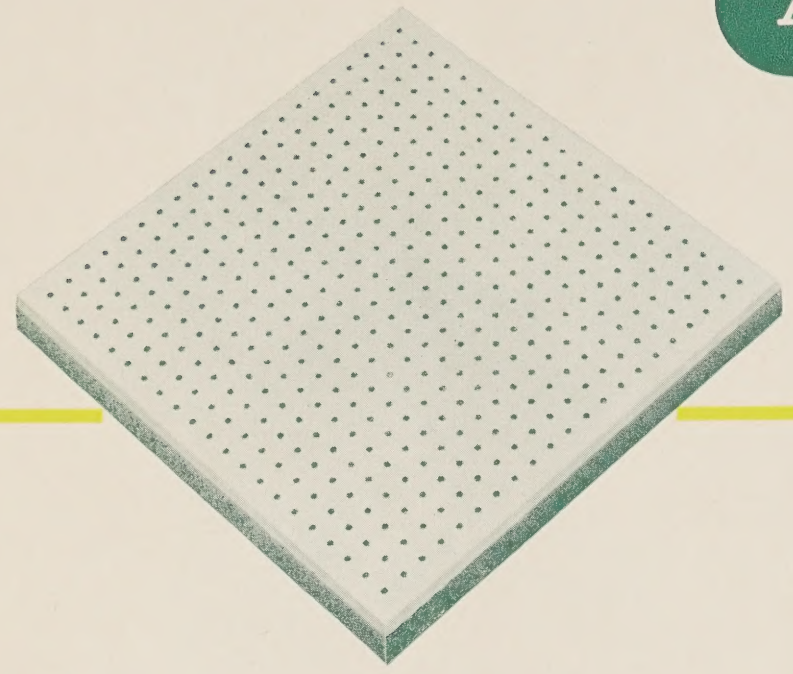


Dr. Paul E. Sabine

So that we may offer to architects and owners, when desired, the opinion of one of America's most highly regarded acoustical consultants, we retain on an annual basis Dr. Paul E. Sabine of Colorado Springs. A Fellow and Past President of the Acoustical Society of America, Dr. Sabine has specialized in acoustics since receiving his Ph.D. in physics at Harvard, 1915. Notable acoustical installations he supervised are the Chicago Civic Opera House, The Fels Planetarium, Philadelphia, and Radio City Music Hall, New York City.



ACOUSTI-CELOTEX



Cane Fibre Tile

- **No. 5 Finish**
- **No. 2 Finish**
- **SB Finish**

Acousti-Celotex C-Series tile are made from the long, tough sugar cane fibres called bagasse. There are myriads of minute interstices between the fibres throughout the entire tile. These tiny voids exposed by perforations give the tile its sound-absorbing qualities.

Bagasse has certain peculiar advantages as a base for fibre tile. The fibres are long, strong and springy. This causes the mass of fibres in a single tile to cling strongly together, producing a correspondingly stronger tile than one made of shorter, smooth fibres, as a simple breaking test will demonstrate. Bagasse, in its natural state, is highly resistant to decay. In the manufacture of Acousti-Celotex C-Series, it is made termite, fungi and dry-rot proof by the patented Ferox treatment.

Acousti-Celotex Cane Fibre Tile is made in three optional factory-applied finishes:

No. 5 Finish — A two-coat, off-white finish rolled onto face of the tile during manufacture. It is a smooth finish, suitable for subsequent painting, and has a light reflection factor of .78.

No. 2 Finish — A deluxe oil-base, flat white paint coating applied over the No. 5 base. This finish is slightly textured to provide a pleasing appearance, and can be repeatedly washed before repainting is necessary. Light reflection factor — .81.

SB Finish — A white, flame-retardent surface coating of washable, oil-base paint applied over the No. 5 base, which gives cane fibre tile a "slow burning" rating. Light reflection factor — .83.

The face of each unit is perforated with $\frac{3}{16}''$ diameter holes, spaced approximately $\frac{17}{32}''$ on centers in square pattern. There are 441 holes per square foot. The $\frac{1}{8}''$ bevel on all four sides of the tile face is standard.

Standard unit sizes are 12″ x 12″ and 12″ x 24″, in $\frac{1}{2}''$, $\frac{5}{8}''$, $\frac{3}{4}''$, 1″ and $1\frac{1}{4}''$ thicknesses.

Erection is by adhesive cement against a suitable backing of plaster, gypsum board or concrete; by suspension on metal or wood furring members; or by concealed screws against wood or gypsum board.

Noise Reduction Coefficients range from .55 to .75, depending on the thickness and method of erection. For auditorium problems, coefficients at 512 cycles range from .63 to .99.

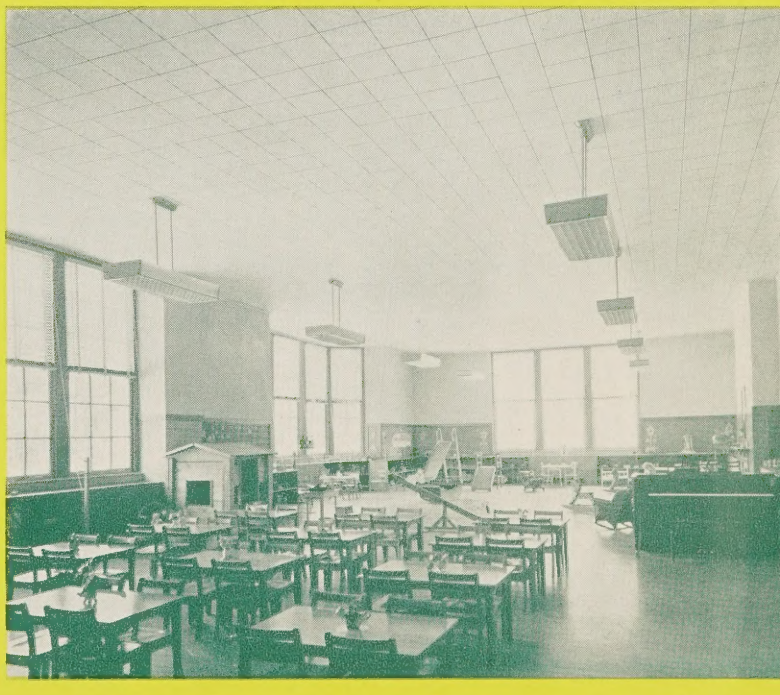
Because of the fixed pattern of surface apertures provided by the perforations, Acousti-Celotex perforated tile can be repeatedly painted without danger of noticeable injury to the absorptivity. Both the No. 2 and the SB Finishes are washable. Washing is made easier if an old decorator's practice is followed, of giving the ceiling one coat of buttermilk, starch or calcimine after erection and after each washing.

Cane Fibre Tile

English Grill, George Washington Hotel, Washington, Pa. Welcome noise reduction and a new look accomplished by ceiling treatment with Acousti-Celotex perforated tile.

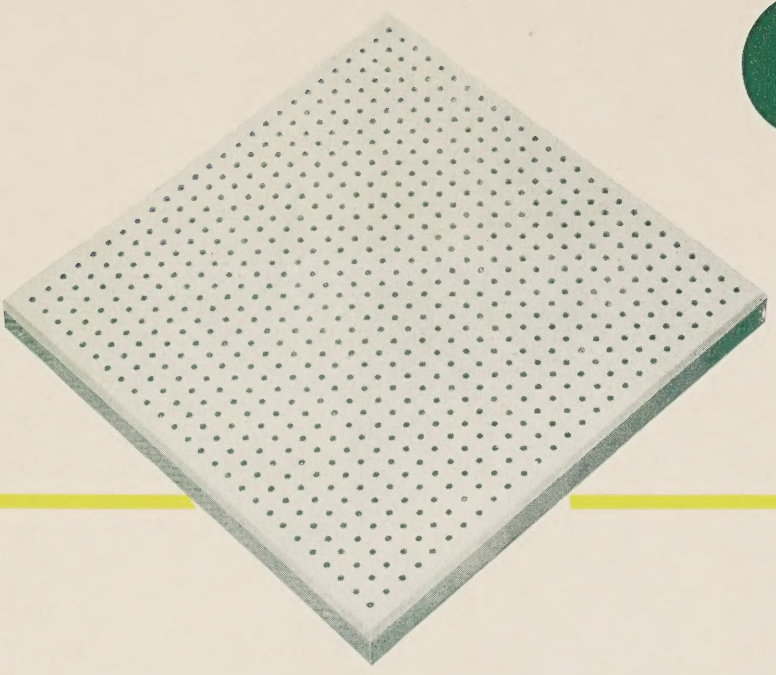
First Congregational Church, Akron, Ohio. Improved acoustics, thermal insulation, removal of falling plaster hazard, new decoration — all four desirables accomplished by new Acousti-Celotex ceiling. Tile screwed to insulation board nailed through old plaster.

Society for Savings Bank, Cleveland. Bookkeeping-Accounting Dept. One of many areas sound-conditioned in the interest of improved efficiency, with Acousti-Celotex. Architects: Garfield, Harris, Robinson & Schafer.



Kindergarten, Ladyfield School, Toledo, Ohio. Sound conditioning has been pronounced by educators as one of the greatest agencies for mental hygiene that can be introduced into the schoolhouse. One of many areas in this modern school treated with Acousti-Celotex. Architect: Bellman, Gillett & Richards.

ACOUSTI-CELOTEX



Mineral Tile

- **Standard Finish**
- **No. 2 Finish**

M-Series Acousti-Celotex tile are made of mineral fibres (rock wool) felted in a manner similar to that used in the manufacture of C-Series Acousti-Celotex, but with the addition of a suitable binder. This binder is added to provide strength and toughness in the finished product. As in C-Series tile, sound is dissipated by friction in the minute interstices between the fibres.

M-Series Acousti-Celotex tile are rated as incombustible.

Mineral Tile is available in two optional shop-applied finishes:

Standard White — casein paint, spray-applied. It is a smooth finish, suitable for subsequent painting, and has a light reflection factor of .80.

No. 2 Finish — A deluxe oil-base, flat white paint coating applied over the Standard base. This finish is slightly textured to provide a pleasing appearance, and can be repeatedly washed before repainting is necessary. Light reflection factor — .81.

The face of each unit is perforated with $^{11}/_{64}$″ diamenter holes, spaced approximately .43″ on centers in square pattern. There are 676 holes per square foot. The ⅛″ bevel on all four sides of the tile face is standard.

M-Series Acousti-Celotex tile are made in two thicknesses: ⅝″ and 1″. Standard size for both thicknesses: 12″ x 12″; there is also available a unit 12″ x 24″ x 1″ fabricated for erection on metal suspension only.

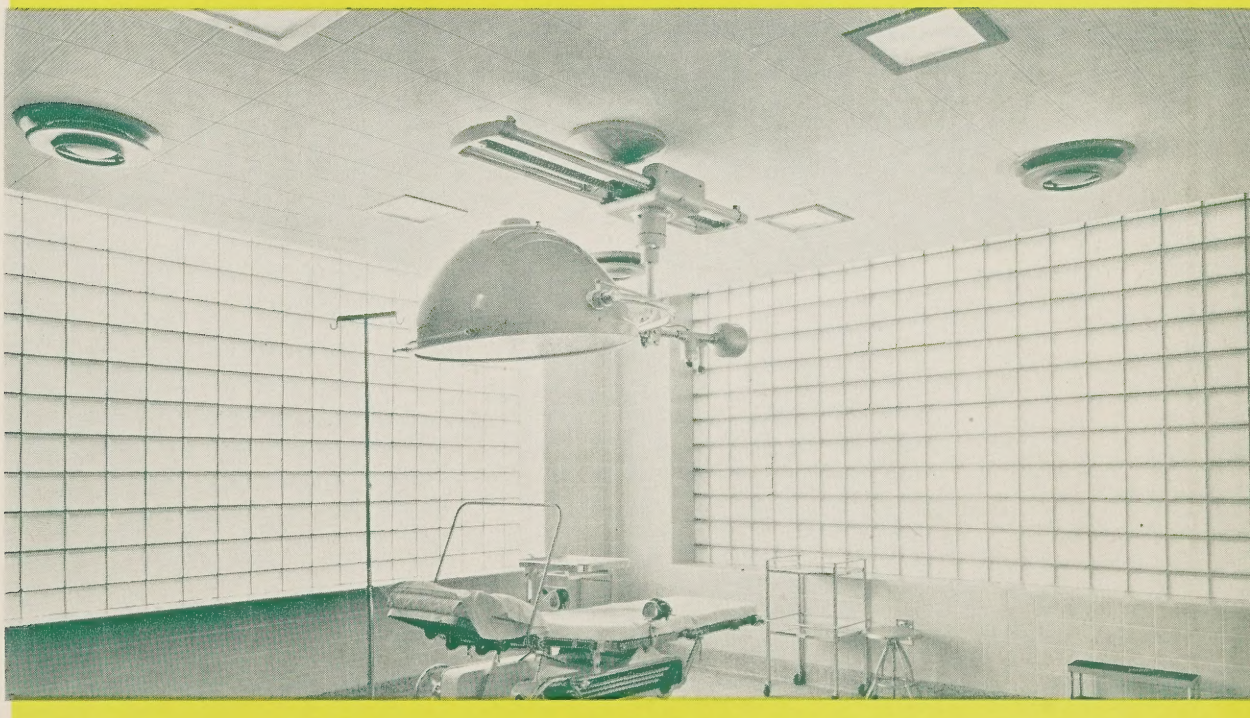
Erection of 12″ x 12″ units is by adhesive cement against a suitable backing of plaster, gypsum board or concrete; or by concealed screws and cement against wood or gypsum board.

Noise Reduction Coefficients range from .65 to .75, depending on the thickness and method of erection. For auditorium problems, coefficients at 512 cycles range from .50 to .92.

Because of the fixed pattern of surface apertures provided by the perforations, Acousti-Celotex perforated tile can be repeatedly painted without danger of noticeable injury to the absorptivity. The No. 2 Finish is washable. Washing is made easier if an old decorator's practice is followed, of giving the ceiling one coat of buttermilk, starch or calcimine after erection and after each washing.

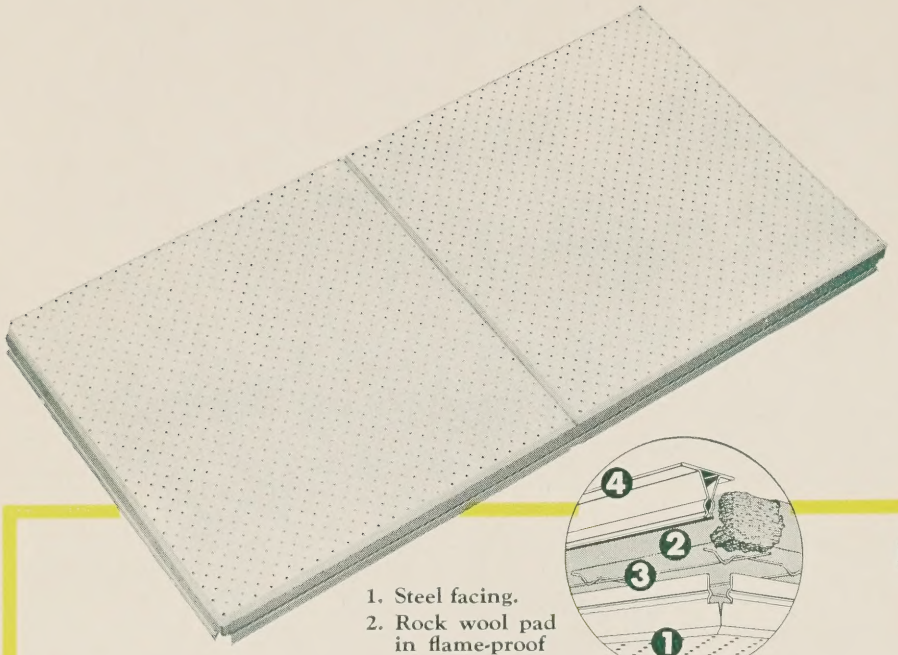
Mineral Tile

B. F. Goodrich Research Laboratory, Brecksville, Ohio. Typical ceiling of Acousti-Celotex Mineral Tile cemented and screwed to gypsum board on Nailock channels. Incombustible throughout. Architect: William Macy Stanton.



Lutheran Hospital Addition, Cleveland. Typical ceiling of Acousti-Celotex Mineral Tile cemented and screwed to gypsum board on Nailock channels. Incombustible throughout. Architect: Walker & Weeks.

CELOTEX



1. Steel facing.
2. Rock wool pad in flame-proof wrapping.
3. Wire grid.
4. Steel T-bar support.

Acousteel

Perforated steel units enclosing sound-absorbing pad

Acousteel is a job-assembled unit consisting of a perforated metal pan enclosing a sound-absorbent mineral fibre pad which rests on a metal pad support.

The perforated metal pan is 12″ x 24″ in size, with a 5/32″ bevel along the exposed edges. Each unit is center scored with a double 5/32″ bevel to give the appearance of two 12″ x 12″ tile. It is made of 26 gauge cold rolled steel.

The face of each unit is perforated with 3/32″ diameter holes, spaced approximately 3/8″ on centers in diagonal pattern. There are 1105 holes per square foot. Bevels, center score and flanges are unperforated.

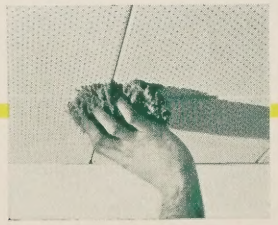
The exposed face, bevels and flanges are finished with two coats of white baked enamel. Unexposed surfaces are finished with one coat of baked enamel.

The upturned flanges are so designed as to engage in metal T-bars which, erected 24″ on centers, hold the units securely in place, while at the same time permitting easy removal of individual units at any time. Including the T-bar, Acousteel is approximately 2½″ thick.

Acousteel may be erected directly against existing ceilings or it can be dropped to lower levels on metal suspension members. As a suspended ceiling, it can accommodate recessed, flush-type troffer lighting; conceal air-ducts, beams or pipes; or it may be used to form a plenum chamber supplying conditioned air to the room by means of air flow channels inserted in the perforated metal pans. In such cases the number, type and location of air flow channels are designed by our engineers in accordance with the air conditioning layout.

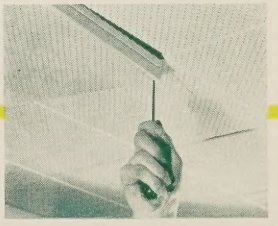
Acousteel has a Noise Reduction Coefficient of .85; the 512 cycle coefficient is .99. The light reflection factor is 76%. It is rated as incombustible.

The baked-on enamel surface of Acousteel pans can be cleaned by washing with any mild soap and water. It can be brush painted when necessary, using an easy-flowing, flat oil base paint thinned to easy working consistency to avoid clogging the perforations.



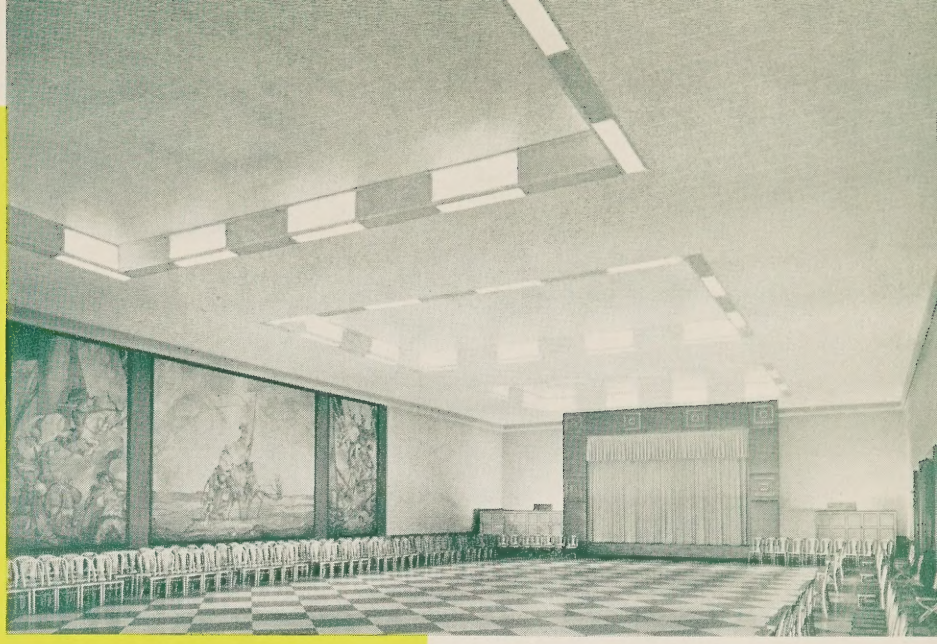
Washable

Paintable



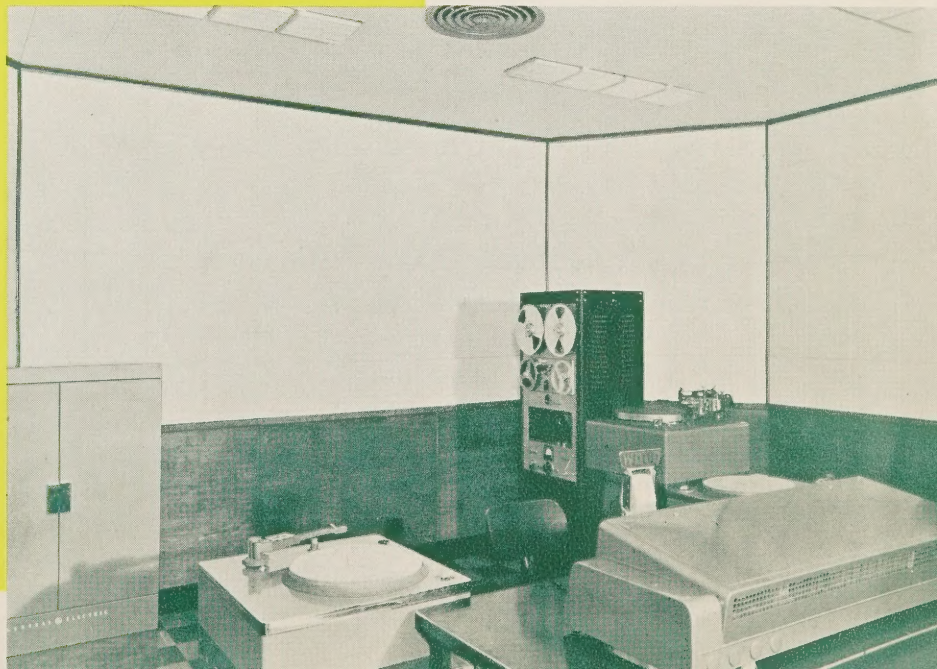
Removable

Acousteel



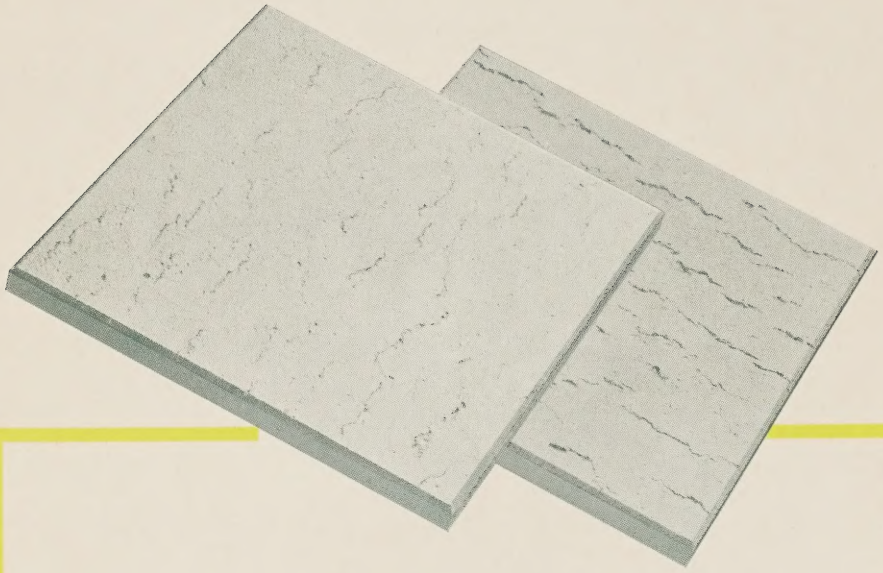
Commodore Perry Hotel, Toledo, Ohio. Don Quixote Ballroom. Ceiling of Acousteel. Heating and air conditioning are introduced above the ceiling and distributed through the Acousteel pans. Speakers forming part of public address system are concealed above ceiling. Architect: Bellman, Gillett and Richards.

Lindner-Davis Company, Cleveland. Entire ceiling of third floor, approximately 34,000 square feet, of Acousteel perforated metal tile, through which conditioned air gently circulates, providing a combination of sound and air conditioning facilities and benefits. Architect: Ward & Conrad.



Station WDUQ Control Room, Pittsburgh. Acousteel perforated metal tile in side-wall panels. Engineering of acoustical requirements in broadcasting and telecasting studios furnished by The George P. Little Company.

CELOTEX



Fissuretone

Type LF — Lightly Fissured
Type HF — Heavily Fissured

Fissuretone, like M-Series Acousti-Celotex, is formed of mineral fibres (rock wool) felted together with the addition of a suitable binder to provide strength and toughness in the finished product and is rated as incombustible. To give sound waves access to the tiny voids between fibres, the surface of the tile is fissured at random, the resulting appearance suggesting a travertine texture.

A wide range in depth and extent of fissuring makes possible, if so desired and specified, the use of Type LF, representing Lightly Fissured, or Type HF, Heavily Fissured, according to size and height of the room and personal preference. In the photograph above, Type LF is illustrated in the sample on the left, Type HF on the right. Unless otherwise specified, installations include a random distribution of both types.

Fissuretone is available in units 12″ x 12″ x ¾″ thick, with beveled or square edges; there is also available a unit 12″ x 24″ x 1″ fabricated for erection on metal suspension only.

Erection of 12″ x 12″ units is by adhesive cement against a suitable backing of plaster, gypsum board, concrete or wood.

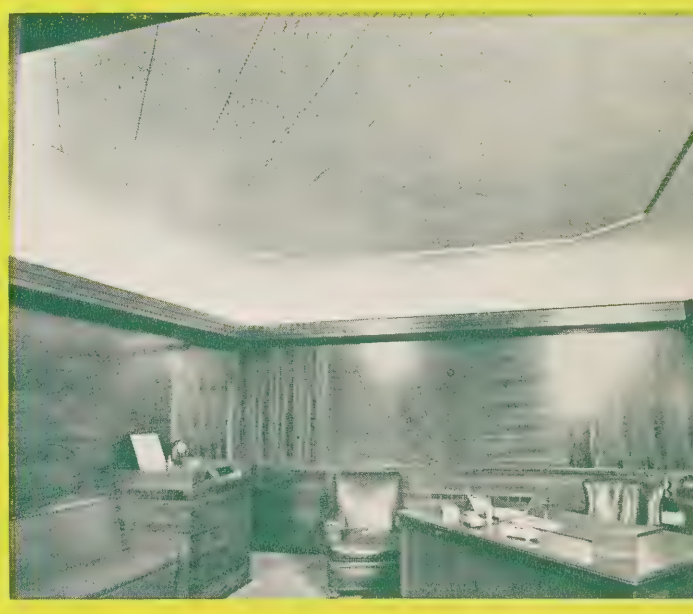
Noise Reduction Coefficient on standard ¾″ thickness is .65; coefficient at 512 cycles is .68.

Fissuretone may be cleaned with ordinary wallpaper cleaner. Painting when necessary should be done with oil-base paints thinned to avoid bridging or filling in surface fissures.

Fissuretone

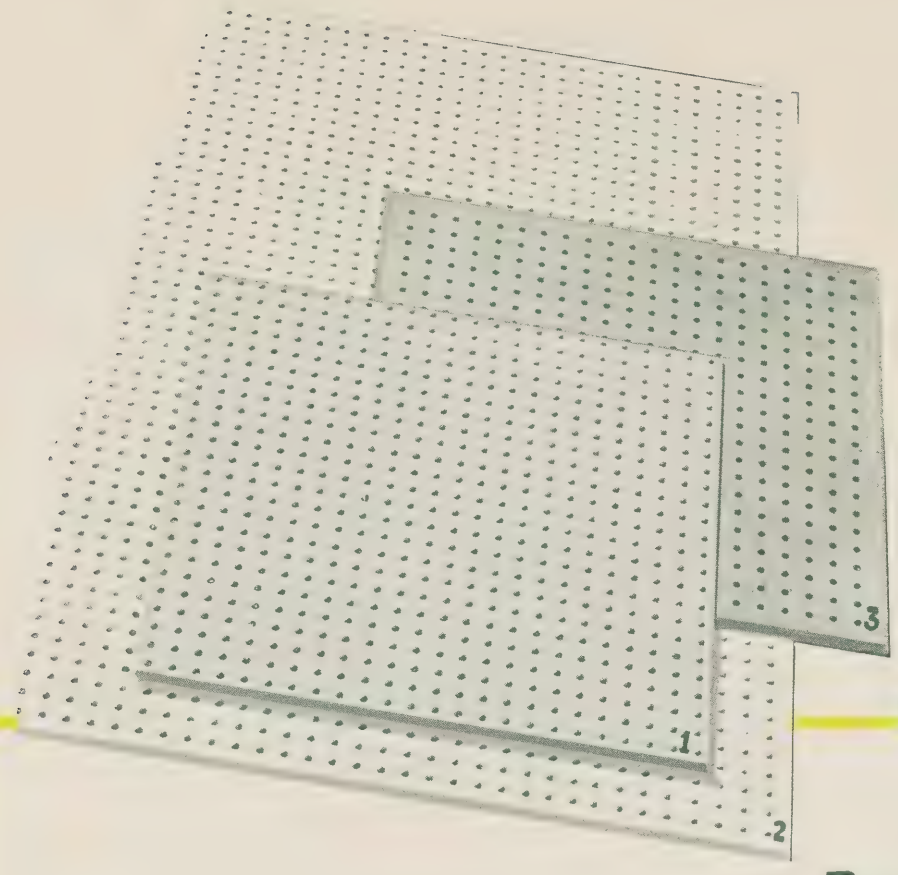
Athletic Club, Cleveland. Main Dining Room. In this ceiling installation of Fissuretone, square-edged units are used and levelled with concealed splines. Always a pleasant dining room, it is now enriched with less noise and more privacy for individual tables. Architect: Dalton-Dalton Associates.

American Legion Assembly Hall, Sharon, Pa. Reverberation is controlled and good hearing conditions provided by the application of Fissuretone acoustical tile on the ceiling. Architect: Scheibel & Shaffer, Youngstown.



Michael's-Oldsmobile Company, Cleveland. Private Office. Here, as in the Display Room, acoustical tile ceilings of Fissuretone were selected for appearance and effective sound control. Architect: C. A. Metzger.

J. P. Heile Motors, Display Room, Cleveland. Decorative ceiling of Fissuretone acoustical tile provides a quiet persuasive atmosphere. Architect: F. W. Mettler.



CELOTEX

Linabestos

- Natural Gray (1)
- No. 2 Finish (2)

Perforated Panel Board

- Natural Brown (3)

Celotex Acoustical Panel assemblies consist of perforated panels of cement-asbestos board (Linabestos), perforated wood fibre board or perforated metal fastened with nails or screws to metal or wood furring strips, and backed with a sound-absorbing element of mineral fibre in rigid or blanket form.

Special acoustical requirements, as for example in the case of radio broadcasting studios, can be met with this system by using sound-absorbing elements of varying types and thicknesses, while maintaining a uniform surface appearance.

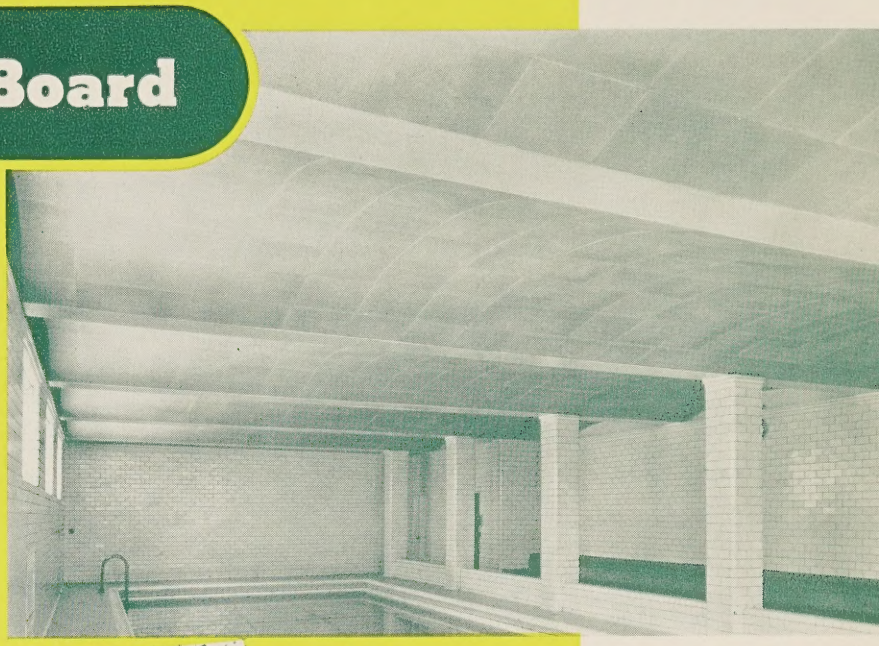
In rooms where abnormally high humidity conditions may prevail, as for example in swimming pools, the combination of perforated cement-asbestos board on corrosion-resistant wood or metal furring strips, backed with a moisture-resistant, mineral sound-absorbing element provides a durable acoustical treatment.

Offering a hard tough surface, this type of treatment may be used on low side-wall areas where resistance to abrasion is important.

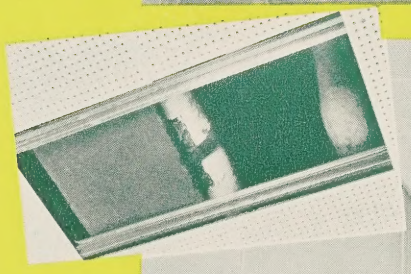
Perforated panel board units can be supplied in large sizes as well as small, making possible a wide latitude in decorative effects. They are available in natural color, or prepainted with No. 2 Finish.

Because of the fixed pattern of surface apertures provided by the perforations, Celotex Acoustical Panel assemblies can be repeatedly painted without noticeable injury to the absorptivity. The No. 2 Finish is washable. Washing is made easier if an old decorator's practice is followed, of giving the ceiling one coat of buttermilk, starch or calcimine after erection and after each washing.

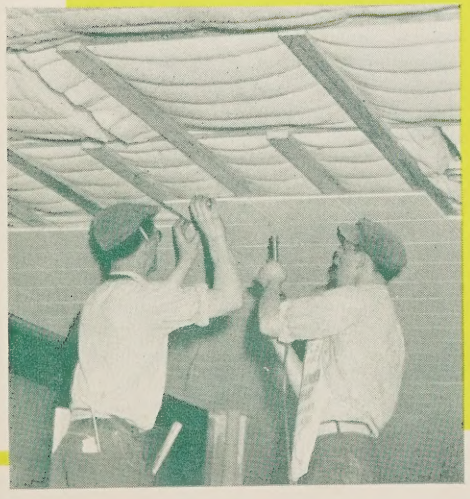
Linabestos and Panel Board



Swimming Pool in Sarah Heinz House, Pittsburgh, Pa. Cries of distress have gone unheeded because unheard in noisy swimming pools. Acoustical treatment as in this case is a good investment in life-saving as well as comfort.



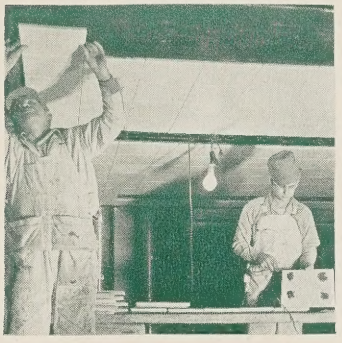
Corridors of B. F. Goodrich Research Laboratory, Brecksville, Ohio. Removable perforated Linabestos panels erected with screws on Pomeroy channels. Construction clearly shown in close-up view of uncovered section.



Noise of a concentration of office machines was effectively controlled by this installation of two-inch thick mineral fibre blanket in back of perforated panels.

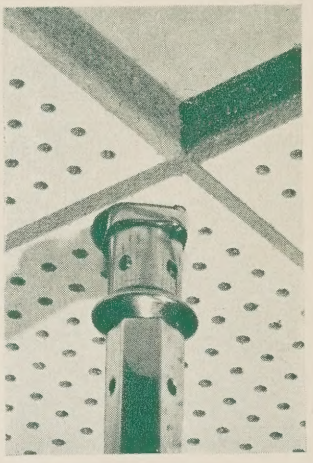
Erection Methods

Cementing
acoustical tile to solid backing



Acousti-Celotex perforated tile and Fissuretone fissured tile can be cemented to plaster, which should be reasonably level and in sound condition. In new construction the white or putty coat of plaster can be omitted. Old plaster should be cleaned of loose paint, grease, etc.

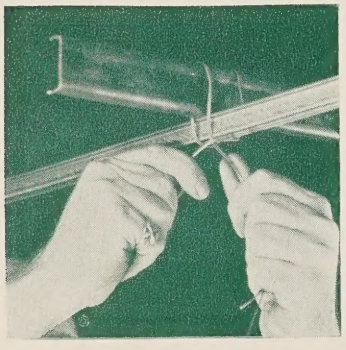
Mechanically Fastening
tile with screws to gypsum board backing



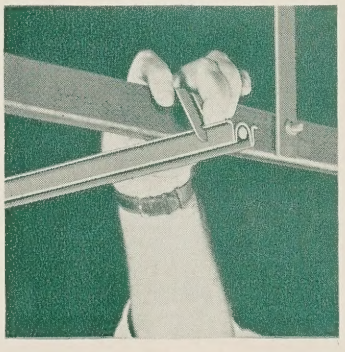
Acousti-Celotex perforated tile can be mechanically fastened with screws concealed in the perforations, to a backing of gypsum board or wood.

Right: The jig, used for driving screws, fits snugly over screw hole and is held firmly in place by guides. Screws are driven quickly and cleanly, without marking tile.

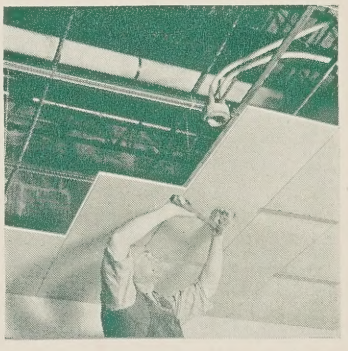
Suspended Ceiling Construction
providing incombustible gypsum board backing on Nailock steel channels



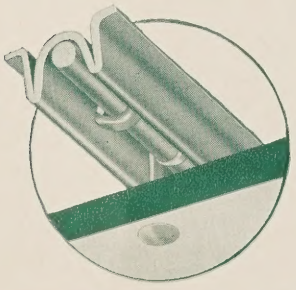
Attach Nailock Universal Nailing Channel to carrying members by wire tie.



Or attach Nailock Universal Nailing Channel to carrying members by use of Nailock Spring Lock Clip. Use of this clip speeds up work and assures safety and permanency of installation.

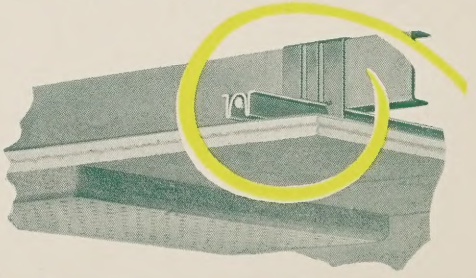


Nail solid backing to Nailock Universal Nailing Channel with Nailock Nails which form locking loop around rod and assure rigidity and permanency.



Close-up showing Nailock nail forming a strong complete loop around steel rod in Nailock channel, locking gypsum board in place.

Close-up section showing Nailock channel clipped to carrying member ($1\frac{1}{2}$" furring channel). Gypsum board backing and acoustical tile mechanically fastened with screws.



AVERY LIBRARY

1

2

1. The Buffet, Toledo, Ohio.
2. Kroger Grocery & Baking Company, Mansfield, Ohio.

Hotel Carter
IN THE HEART OF
Cleveland
PHONE PROSPECT 1200

OFFICE OF THE MANAGING DIRECTOR

In connection with the Celotex Sound Conditioning, which was recently installed in our Colonial Room, Coffee Shop, and Cocktail Lounge, we want you to know that we are very well satisfied with this work.

The material itself adds to the appearance of the rooms, and the much quieter atmosphere gives more enjoyment to our guests.

3. Melody Rink, Uniontown, Pa.
4. Marshall Drug Store, Cleveland.
5. Firestone Tire & Rubber Company, Printing Plant Office, Akron.

3

DE ETTE HARRISON DETWILER MEMORIAL HOSPITAL
WAUSEON, OHIO

OFFICE OF THE SUPERINTENDENT

As you are doubtless aware, our Womens' Auxiliary paid for the sound conditioning of three patients' rooms as an experiment a year ago. We had had our hallways, utility rooms, nursery, delivery and labor rooms done several years ago but doing patients' rooms was a new departure for us. The comment that we have received from the patients who have used the room before Celotex was installed and after the installation have more than convinced us that this project is very worth while.

4

The East Liverpool City Schools
MARTIN W. ESSEX, SUPERINTENDENT
East Liverpool, Ohio

The installation of Celotex sound conditioning in our Memorial Auditorium, which you completed in December, has exceeded our expectations. The calm, and lack of reverberations during crowds of 1500 to 2000 people at basketball games, dramatic presentations, and musical performances indicate that such a treatment is, indeed, highly satisfactory. Likewise, the time involved in bringing the building up to temperature has been greatly reduced.

5

THE **WEATHERHEAD** COMPANY
300 EAST 131ST STREET
CLEVELAND 8, OHIO

Gasoline and Oil Proof Flexible Hose
Chain Couplings · Drain Cocks · Tube Fittings
Punch Presses and Automatic Screw Machine Products

CLARK ASSOCIATES "WEATHCO"
BENTLEY AND WESTERN UNION CODES
GLENDALE, CALIFORNIA
1738 STANDARD AVENUE
NEW YORK CITY
LINCOLN BUILDING
DETROIT, MICHIGAN
928 FISHER BUILDING
CHICAGO, ILLINOIS
1810 PURE OIL BUILDING
ST. LOUIS, MISSOURI
3612 OLIVE STREET

We consider it essential to the efficient operation of our Drafting Room and Offices to treat the ceilings with Acoustic material. We have several thousand square feet of Celotex Ceilings installed and are very much pleased with them. The workmanship shown by the George P. Little Company in these installations is especially commendable.

Cleveland Union
Terminal Concourse

Clark's Yorktown
Restaurant, Cleveland

"We are so pleased with the results of Celotex Sound Conditioning in the dining rooms and assembly room in the Bureau of Juvenile Research that we have decided to treat part of our office building in a similar manner." The State Bureau of Juvenile Research, Columbus.

• • • • •

"The recent installation of Celotex Sound Conditioning in our office has been most successful. Not only has the noise been softened, but the appearance of the office has been greatly improved." The Welles-Bowen Company, Toledo.

• • • • •

"Because of the bookkeeping, payroll, addressing and calculating machines in use in our Accounting Department, the noise level was such that it interfered with concentration and necessary conversation. The application of Celotex Sound Conditioning has changed the general effect from one of noisy activity to quiet, efficient production." The S. K. Wellman Company, Cleveland.

• • • • •

"The installation of your sound proofing in our bank was done in a workmanlike manner. The installation greatly reduces the amount of the noise raised by our bookkeeping machines and we are well pleased with it." Duquesne City Bank, Duquesne, Pa.

• • • • •

"Recently you installed Celotex Sound Conditioning in our new Church. We are very much satisfied with it and have had many compliments from speakers and congregation on how it cuts down noises and echoes in the church auditorium. It is also a beautifully finished job." Shadeland Avenue Christian Church, Pittsburgh.

• • • • •

"Our main science room is now the most popular lecture room on the campus. Your engineering and maintenance staffs deserve all the credit for this improvement in hearing conditions." John Carroll University, Cleveland.

• • • • •

"In our Bookkeeping Department your installation of Acousti-Celotex has done even more for the acoustics of the room than you claimed for it. It has reduced the machine noises to a minimum." The Metropolitan Bank of Lima, Ohio.

• • • • •

"We have now occupied our new office some eight weeks and each day realize more and more how the Acousti-Celotex ceiling supplied and installed by your firm has well paid for itself. It has done this first and foremost in its effect of reducing to a minimum all mechanical, vocal and other sounds and secondly by its attractive and very modern appearance." Alliance Rubber Company, Alliance, Ohio.

Sound Conditioning with **ACOUSTI-CELOTEX**

The George P. Little Company, Inc.

Acoustical Engineers & Contractors

ESTABLISHED 1923

Distributors of Celotex Acoustical Products since 1925

CLEVELAND	AKRON	COLUMBUS	TOLEDO	PITTSBURGH
1100 West 9th Street	759 So. High Street	1313 Edgehill Road	3623 Larchmont Parkway	32 Isabella Street